

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
27 May 2004 (27.05.2004)

PCT

(10) International Publication Number
WO 2004/044279 A2

- (51) International Patent Classification⁷: **D01D**
- (21) International Application Number:
PCT/EP2003/012848
- (22) International Filing Date:
14 November 2003 (14.11.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
0226574.2 14 November 2002 (14.11.2002) GB
- (71) Applicant (*for all designated States except US*): **SPINOX LIMITED** [GB/GB]; Units 14-15, Galaxy House, New Greenham Park, Newbury, Berks RG19 6HW (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **KNIGHT, David, Philip** [GB/GB]; 107 Teg Down Meads, Winchester, Hampshire SO22 5NG (GB). **VOLLRATH, Friedrich, Wilhelm, Ludwig, Paul** [DE/GB]; Upper Woods Farm, Islip Road, Beckley, Oxford, Oxfordshire OX3 9TF (GB).
- (74) Agent: **WHITE, Nicholas, J.**; Rouse Patents, Windsor House, Cornwall Road, Harrogate HG1 2PW (GB).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— *without international search report and to be republished upon receipt of that report*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: **APPARATUS AND METHOD FOR FORMING MATERIALS**

(57) **Abstract:** The invention is an extrusion apparatus and a method for extruding fibres. The extrusion apparatus has a first tubular passage (17) through which a core material (25) is extrudable. The tubular passage (17) has a first exit opening (13). In operation, the core material (25) is drawn down at a first distance at least 0.5 mm from the outer exit opening (13) within the first tubular passage (17). In another embodiment of the invention, the extrusion apparatus is provided with a second tubular passage (50) through which a coating material (27) is extrudable. The second tubular passage is disposed about the first tubular passage (17) and has an inner opening (52). The inner opening (52) is within the second tubular passage (50) and, in operation, coating material (27) is drawn down within the second tubular passage (50).